

Coast Guard, DHS

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control that is outside of the space containing the pump or fan.

(b) Each stop control must meet §111.103–7.

Subpart 111.105—Hazardous Locations

§ 111.105–1 Applicability; definition.

This subpart applies to installations in hazardous locations as defined in NFPA NEC 2002 and in IEC 60079–0 (both incorporated by reference; see 46 CFR 110.10–1). As used in this subpart, “IEC 60079 series” means IEC 60079–0, IEC 60079–1, IEC 60079–2, IEC 60079–5, IEC 60079–6, IEC 60079–7, IEC 60079–11, IEC 60079–15, and IEC 60079–18 (all incorporated by reference; see 46 CFR 110.10–1).

[USCG–2003–16630, 73 FR 65199, Oct. 31, 2008, as amended by USCG–2013–0671, 78 FR 60153, Sept. 30, 2013]

§ 111.105–3 General requirements.

All electrical installations in hazardous locations must comply with the general requirements of section 33 of IEEE 45–1998 (incorporated by reference; see 46 CFR 110.10–1), and with either Articles 500 through 505 of NFPA NEC 2002 (incorporated by reference; see 46 CFR 110.10–1) or with the IEC 60079 series (as defined in 46 CFR 111.105–1 and incorporated by reference; see 46 CFR 110.10–1). When installations are made in accordance with NFPA NEC 2002 articles, and when installed fittings are approved for the specific hazardous location and the cable type, marine shipboard cable that complies with 46 CFR subpart 111.60 may be used instead of rigid metal conduit.

[USCG–2003–16630, 73 FR 65199, Oct. 31, 2008]

§ 111.105–5 System integrity.

In order to maintain system integrity, each individual electrical installation in a hazardous location must comply specifically with Articles 500–505 of NFPA NEC 2002 (incorporated by reference; see 46 CFR 110.10–1), as modified by 46 CFR 111.105–3, or with the IEC 60079 series (as defined in 46 CFR 111.105–1 and incorporated by reference; see 46 CFR 110.10–1), but not in combination in a manner that will compromise system integrity or safety.

Hazardous location equipment must be approved as suitable for use in the specific hazardous atmosphere in which it is installed. The use of nonapproved equipment is prohibited.

[USCG–2003–16630, 73 FR 65200, Oct. 31, 2008]

§ 111.105–7 Approved equipment.

When this subpart or NFPA NEC 2002 (incorporated by reference; see 46 CFR 110.10–1) states that an item of electrical equipment must be approved, or when IEC 60079–0 (incorporated by reference; see 46 CFR 110.10–1) states that an item of electrical equipment must be tested or approved in order to comply with the IEC 60079 series (as defined in §111.105–1 and incorporated by reference; see 46 CFR 110.10–1), that item must be—

(a) Listed or certified by an independent laboratory as approved for use in the hazardous locations in which it is installed; or

(b) Purged and pressurized equipment that meets NFPA 496 (incorporated by reference; see 46 CFR 110.10–1) or IEC 60079–2.

[CGD 94–108, 61 FR 28284, June 4, 1996, as amended by USCG–2003–16630, 73 FR 65200, Oct. 31, 2008]

§ 111.105–9 Explosion-proof and flame-proof equipment.

Each item of electrical equipment required by this subpart to be explosion-proof under the classification system of NFPA NEC 2002 (incorporated by reference; see 46 CFR 110.10–1) must be approved as meeting UL 1203 (incorporated by reference; see 46 CFR 110.10–1). Each item of electrical equipment required by this subpart to be flame-proof must be approved as meeting IEC 60079–1 (incorporated by reference; see 46 CFR 110.10–1).

[USCG–2003–16630, 73 FR 65200, Oct. 31, 2008]

§ 111.105–11 Intrinsically safe systems.

(a) Each system required by this subpart to be intrinsically safe must use approved components meeting UL 913 or IEC 60079–11 (both incorporated by reference; see 46 CFR 110.10–1).

(b) Each electric cable of an intrinsically safe system must—

(1) Be 50 mm (2 inches) or more from cable of non-intrinsically safe circuits,

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partitioned by a grounded metal barrier from other non-intrinsically safe electric cables, or a shielded or metallic armored cable; and

(2) Not contain conductors for non-intrinsically safe systems.

(c) As part of plan approval, the manufacturer must provide appropriate installation instructions and restrictions on approved system components. Typical instructions and restrictions include information addressing—

(1) Voltage limitations;

(2) Allowable cable parameters;

(3) Maximum length of cable permitted;

(4) Ability of system to accept passive devices;

(5) Acceptability of interconnections with conductors or other equipment for other intrinsically safe circuits; and

(6) Information regarding any instructions or restrictions which were a condition of approval of the system or its components.

(d) Each intrinsically safe system must meet ISA RP 12.6 (incorporated by reference, see 46 CFR 110.10-1), except Appendix A.1.

[CGD 94-108, 61 FR 28284, June 4, 1996, as amended at 62 FR 23909, May 1, 1997; USCG-2003-16630, 73 FR 65200, Oct. 31, 2008]

§ 111.105-15 Additional methods of protection.

Each item of electrical equipment that is—

(a) A powder-filled apparatus must meet IEC 60079-5 (incorporated by reference; see 46 CFR 110.10-1);

(b) An oil-immersed apparatus must meet either IEC 79-6 (incorporated by reference; see 46 CFR 110.10-1) or Article 500.7(I) of NFPA NEC 2002 (incorporated by reference; see 46 CFR 110.10-1);

(c) Type of protection “e” must meet IEC 60079-7 (incorporated by reference; see 46 CFR 110.10-1);

(d) Type of protection “n” must meet IEC 60079-15 (incorporated by reference; see 46 CFR 110.10-1); and

(e) Type of protection “m” must meet IEC 60079-18 (incorporated by reference; see 46 CFR 110.10-1).

[USCG-2003-16630, 73 FR 65200, Oct. 31, 2008, as amended by USCG-2013-0671, 78 FR 60153, Sept. 30, 2013]

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§ 111.105-17 Wiring methods for hazardous locations.

(a) Through runs of marine shipboard cable meeting subpart 111.60 of this part are required for all hazardous locations. Armored cable may be used to enhance ground detection capabilities. Additionally, Type MC cable may be used subject to the restrictions in § 111.60-23.

(b) Where conduit is installed, the applicable requirements of either NFPA NEC 2002 (incorporated by reference; see 46 CFR 110.10-1) or the IEC 60079 series (as defined in § 111.105-1 and incorporated by reference; see 46 CFR 110.10-1) must be followed.

(c) Each cable entrance into explosionproof or flameproof equipment must be made with approved seal fittings, termination fittings, or glands that meet the requirements of § 111.105-9.

(d) Each cable entrance into Class II and Class III (Zone 10, 11, Z, or Y) equipment must be made with dust-tight cable entrance seals approved for the installation.

[CGD 94-108, 61 FR 28284, June 4, 1996, as amended at 62 FR 23909, May 1, 1997; USCG-2003-16630, 73 FR 65200, Oct. 31, 2008]

§ 111.105-19 Switches.

A switch that is explosionproof or flameproof, or that controls any explosionproof or flameproof equipment, under § 111.105-19 must have a pole for each ungrounded conductor.

[CGD 94-108, 61 FR 28284, June 4, 1996]

§ 111.105-21 Ventilation.

A ventilation duct which ventilates a hazardous location has the classification of that location. Each fan for ventilation of a hazardous location must be nonsparking.

[CGD 94-108, 61 FR 28285, June 4, 1996]

§ 111.105-27 Belt drives.

Each belt drive in a hazardous location must have:

(a) A conductive belt; and